

## BONE

## Subclinical hypercortisolism raises vertebral fracture risk

Subclinical hypercortisolism is associated with an increased risk of vertebral fractures in patients with adrenal incidentaloma, according to a study published in the *Journal of Bone and Mineral Research*.

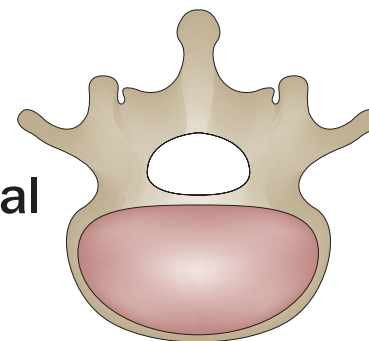
An estimated 30% of patients with an adrenal incidentaloma show some alterations of the hypothalamic–pituitary–adrenal axis in the absence of specific symptoms or signs of cortisol excess, a condition defined as subclinical hypercortisolism. Over the past years, subclinical hypercortisolism has been associated with an increased prevalence of metabolic complications, osteoporosis and vertebral fractures. These complications occur regardless of BMD and are, therefore, considered the result of a reduction in bone quality.

“In our study we aimed to evaluate the progression of bone involvement, in terms of BMD, incidence of vertebral fractures and modification of spinal deformity index (SDI)—a semiquantitative method that

integrates the number and the severity of vertebral fractures as a surrogate tool for bone quality—in a group of men and women with adrenal incidentalomas with and without subclinical hypercortisolism,” explains lead investigator Valentina Morelli from the University of Milan.

The investigators analyzed 103 consecutive patients with adrenal incidentaloma at baseline and after 12 and 24 months. Patients were divided into two groups (with or without subclinical hypercortisolism) depending on the presence of two or more of the following criteria in more than two out of the three evaluations: urinary free cortisol >193 nmol over 24 h, serum cortisol after a 1 mg dexamethasone suppression test >83 nmol/l and ACTH <2.2 pmol/l.

In accordance with previous studies, Morelli and colleagues found that in patients with adrenal incidentaloma subclinical hypercortisolism was associated with an increased prevalence of vertebral



fractures independent of BMD, age, sex, BMI, baseline SDI or menopause duration. “Moreover, after 2 years of follow up, only in patients with subclinical hypercortisolism, we observed a higher incidence of new vertebral fractures (48%) compared to baseline, despite a stable BMD,” comments Morelli.

These results confirm the deleterious effect of subclinical cortisol excess on bone tissue and suggest that BMD is insufficient to evaluate patients with adrenal incidentalomas and subclinical hypercortisolism over time.

*Linda Koch*

**Original article** Morelli, V. *et al.* Risk of new vertebral fractures in patients with adrenal incidentaloma with and without subclinical hypercortisolism: a multicenter longitudinal study. *J. Bone Miner. Res.* doi:10.1002/jbmr.398